

# Abdul Rehman

AI Engineer

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[LinkedIn](#) | [GitHub](#) | [Google Scholar](#) | [CV](#)

## Summary

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Recent BSCS graduate from the University of Lahore, ranked second in class. As a research assistant in an AI lab, I developed and evaluated deep learning models for medical imaging, deepfake detection, and surveillance. I've also worked professionally as a backend developer on client-facing and public-sector software projects. More recently, I've been building independently — a retrieval-augmented generation system for document question-answering, a conversational agent with persistent memory, and a smart surveillance system deployed on Raspberry Pi that detects suspicious objects and delivers spoken alerts. Across these projects, I've trained transformer models for classification and generation, and built machine learning pipelines for data processing, training, and evaluation. I'm now looking to bring this research and hands-on experience into a role focused on applied AI.

## Education

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### Bachelor of Science in Computer Science

Mar 2022 – Feb 2026

*University of Lahore, Sargodha Campus*

*CGPA: 3.90/4.00*

## Technical Skills

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**Languages:** Python (primary), SQL, C++, Java, PHP

**ML/DL Frameworks:** TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Matplotlib

**AI & LLM Tools:** LangChain, LangGraph, LangSmith, OpenAI Agents SDK, Pinecone, Prompt Engineering

**Technologies:** Deep Learning, Machine Learning, NLP, Agentic AI, RAG

**Platforms & Tools:** FastAPI, Streamlit, Docker, Git, Hugging Face, OpenAI Platform, Kaggle, PostgreSQL

## Experience

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### Research Lab Member – VLCMatrixLab

Jul 2023 – Present

*University of Lahore*

*Sargodha, Pakistan*

- Collaborated with peers to build deep learning models for medical imaging & deepfake detection.
- Managed ML workflow including data preprocessing, model training, and hyperparameter tuning
- Designed and optimized deep learning architectures using TensorFlow and Keras.

### Software Developer

Nov 2024 – Dec 2024

*Abbasia Library*

*Bahawalpur, Pakistan*

- Developed a library system for Abbasia Library using Laravel, and Tailwind CSS.
- Implemented modules for fine tracking, lost/overdue books, issue card generation, and user management.
- Worked remotely, gathering requirements and applying feedback through regular staff collaboration.

## Projects

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### YOLO11 Intelligent Surveillance System

Final Year Project

- Built a real-time surveillance system on Raspberry Pi using YOLO11 and OpenAI Vision API for object detection.
- Integrated Piper TTS for spoken alerts and built a live web dashboard for monitoring and control.

### LangGraph App Builder – Multi-Agent Code Generation

2025

- Engineered a multi-agent system where specialized agents collaborate to generate working applications.
- Implemented sandboxed file operations, full observability via LangSmith, and seamless agent coordination.

### RAG-Based Document Q&A System

2025

- Built a question-answering system using LangChain and Pinecone for intelligent document search over PDFs.
- Enabled semantic retrieval and accurate response generation from PDF content using vector embeddings.

### AI Conversational Agent with Persistent Memory

2025

- Developed a general-purpose assistant with persistent memory and conversation history using OpenAI Agents SDK.

- Enabled context-aware, action-capable interactions across sessions via tool-calling capabilities.

### Quora Duplicate Question Detection

2025

- Trained an ML model using Scikit-learn to detect duplicate question pairs with NLP features and TF-IDF.
- Developed a Streamlit frontend with a FastAPI backend for real-time similarity predictions.

### Publications

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- [1] AI-Powered Surveillance Systems: A Comprehensive Review – *WIREs Data Mining & Knowledge Discovery (Wiley)*, 2026. **Accepted**
- [2] CADNet: Cross-Aligned Dual-Stream Network for Building Damage Assessment – *ICCA 2025 (IEEE)*. **Accepted**
- [3] Deepfake Video Detection: Xception-CBAM-BiLSTM with Attention – *ICETCS 2025 (Springer)*. **Accepted**
- [4] Sign Language Detection with Deep CNN – *ICIC 2024 (IEEE)*.
- [5] Data-Efficient Wheat Disease Detection using Swin Transformer – *IEEE Trans. Consumer Electronics*, 2024.
- [6] Diabetic Foot Ulcer Detection: SSD and YOLO Architectures – *HONET 2024 (IEEE)*.

### Certifications

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- Generative AI Applications Specialist (IBM)
- AI Agents Using RAG & LangChain (IBM)
- Gen AI Applications with RAG & LangChain (IBM)
- Prompt Engineering Basics (IBM)
- Agentic AI Level 2 Professional (PIAIC)
- Fundamentals of Agentic AI Level 1 (PIAIC)
- AI Python Level 1 (PIAIC)
- Prompt & Context Engineering Level 1 (PIAIC)

### Presentations & Conferences

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- International Conference on Emerging Trends in Cybersecurity (Oct 2025)
- International Conference on Sciences for Future Trends (Dec 2024)
- International Conference on Innovative Computing – ICIC (Nov 2024)
- POCO-24 Workshop (Nov 2024)